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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Pradeep J. Iyer

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EXAMINER

RIYAMI, ABDULLA A

ART UNIT

PAPER NUMBER

2416

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/806,601	<b>Applicant(s)</b> IYER ET AL.	
	<b>Examiner</b> ABDULLAH RIYAMI	<b>Art Unit</b> 2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 January 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 13 and 15-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13 and 15-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. This is a response to an amendment/response filed on 01/20/2009.
2. Claims 21-25 have been withdrawn from consideration as being directed to a non-elected invention.
3. Claims 13 and 15-17 remain pending in the application.

### ***Response to Arguments***

4. Applicant's arguments filed 01/20/2009 have been fully considered but they are not persuasive. Applicants argue that Dietrich and Cameron, taken alone or in combination do not disclose (1) placing an address of the station into a list identifying stations located in a potential coverage hole if none of the plurality of access points computes a RSSI value of the management message above the second RSSI threshold; and (2) removing the address of the station from the list one of the plurality of access points computes the RSSI value of the management message above the first RSSI threshold.

Examiner respectfully disagrees with Applicant's characterization of the prior art. Dietrich discloses placing an address of the station into a list identifying stations located in a potential coverage hole if none of the plurality of access points computes a RSSI value of the management message above the second RSSI threshold (see column 4, lines 15-25, figure 1, block 24, the central control element determines coverage holes, and figure 4, coverage analysis module 80 and stats collector 84, column 10, lines 7-29, stats collector maintains a list for each mobile station identifier and their corresponding

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signal strengths below a threshold signal level). Notice in column 8, lines 5-10, lines 16-20, stats collector maintains a list of signal strengths, 802.11 chip for each vendor has a specific maximum RSSI value (RSSI Max), therefore RF energy level reported by a particular vendor will range 0 to RSSI-Max, and the RSSI can be used in determining the existence of coverage holes in a wireless network environment. Notice in column 10, lines 13-16, stats collector maintains the detected strengths values associated with each packet corresponding to remote client elements.

Dietrich discloses removing the address of the station from the list one of the plurality of access points computes the RSSI value of the management message above the first RSSI threshold (see figure 5a, when the same mobile is detected, then an updated signal strength is recorded and updated in the stats collector and if it is not below threshold, it is not considered as an impact to the coverage hole analysis). Notice in column 10, lines 55-65, the coverage analysis module detects signal strengths of mobile stations and determines that the average signal strengths is less than a **threshold level** (minimum coverage profile is violated as discussed in column 9, lines 64-66), coverage analysis module then issues a notification to increase transmit power of the associated access element, so the next the coverage module receives signal strengths of the mobile stations (according to the embodiment described in column 10, lines 7-29), the average signal strength would not be violating the **threshold of the minimum coverage profile**, meaning that it no longer impacts the embodiment where coverage analysis to each access element is based on percentage of mobile stations below a threshold signal strength level. In another view, notice in column 11, lines 4-15,

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the stats collector generates a **delimited list** based on the minimum coverage profile and compares it to a high profile user (which have indication on/off) to determine whether a notification should be issued. In another view, see column 10, lines 26-29, a separate process scans the list of mobile stations identifiers and deletes entries where no activity has been detected for a period of time, i.e. no signal strength is detected (due to mobile station being in a hole, or turned off etc.) as to a threshold of the device designed by the manufacturer (column 8, lines 5-8), the mobile station gets deleted. In also another view, **deleting** the mobile station when there is inactivity is an obvious variation of Applicant's removing of the address to a greater threshold, both achieving the same result of detecting coverage holes in a list such as a stats collector (see column 10, line 10).

Cameron disclose setting a plurality of received signal strength indicator (RSSI) thresholds including a first RSSI threshold and a second RSSI threshold having a value lower than the first RSSI threshold (see column 2, line 60-65, column 3, lines 5-10, column 4, lines 27-45, the central server sets a plurality of thresholds indicating event zones). Notice in column 2, lines 60-65, Cameron teaches of measuring the strengths of the signals received from a plurality of access points and storing the measured values with identifying physical addresses and matching the stored values with signal strength thresholds of a table of **event zones delimited by signal strength**. The signal strength thresholds define the event zones. Notice in column 4, line 40-45, the central server retrieves data and correspondence tables between the signal level thresholds associated to each access point and the event zones. Notice in column 6, lines 49-54,

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the received signal level measurement of the access point being used is compared to **predetermined threshold values** stored in a dedicated table indicating event zones.

Thus, different stations, access points are defined as belonging to different event zones by being compared to different predetermined threshold values.

### ***Claim Rejections - 35 USC § 103***

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 13 and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dietrich et al. (US 7301926 B1) in view of Cameron (US 7079850 B2).

As per claim 13, Dietrich et al. discloses a method of computing a RSSI value for a management message by a plurality of access points detecting the management message, the management message originating from a station (see column 3, lines 55-65, the management message from the originating station gets encapsulated with the signal strength); placing an address of the station into a list identifying stations located in a potential coverage hole if none of the plurality of access points computes a RSSI value of the management message above the second RSSI threshold (see column 4, lines 15-25, figure 1, block 24, the central control element determines coverage holes, and figure 4, coverage analysis module 80 and stats collector 84, column 10, lines 7-29, stats collector maintains a list for each mobile station identifier and their corresponding signal strengths below a threshold signal level); removing the address of the station from the list if one of the plurality of access points computes the RSSI value of the management message above the first RSSI threshold (see figure 5a, when the same mobile is detected, then an updated signal strength is recorded and updated in the stats collector and if it is not below threshold, it is not considered as a coverage hole analysis).

Dietrich et al. does not expressly disclose setting a plurality of received signal strength indicator (RSSI) thresholds including a first RSSI threshold and a second RSSI threshold having a value lower than the first RSSI threshold.

Cameron disclose setting a plurality of received signal strength indicator (RSSI) thresholds including a first RSSI threshold and a second RSSI threshold having a value lower than the first RSSI threshold (see column 2, line 60-65, column 3, lines 5-10, column 4, lines 27-45, the central server sets a plurality of thresholds indicating event zones).

Cameron and Dietrich et al. are analogous art because they are from the same field of endeavor of transmitting and receiving management frames and measuring and recording their signal strengths.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the method of Dietrich et al.'s coverage hole detection (see column 4, lines 15-25) by incorporating Cameron's different signal level thresholds for mitigating event zones(see column 2, line 60-65, column 3, lines 5-10).

The motivation to combine would have been to have a coverage hole detection method of receiving and measuring signal strengths of mobile stations through access points, and comparing them with set thresholds then determining on or more events based on the comparison which increases the accuracy of the detection (see column 2, lines 60-65, Cameron).

As per claim 15, Dietrich et al. teaches of a method, computing a RSSI value for a management message by a plurality of access points detecting the management



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message, the management message originating from a station (see column 4, lines 15-25, figure 1, block 24, the central control element determines coverage holes, and figure 4, coverage analysis module 80 and stats collector 84, column 10, lines 7-29, stats collector maintains a list for each mobile station identifier and their corresponding signal strengths below a threshold signal level).

Dietrich et al. does not expressly disclose the first RSSI threshold is greater than or equal to 20 dbm0 and the second RSSI threshold is less than 20 dbm0.

Cameron discloses a method wherein the first RSSI threshold is greater than or equal to 20 dbm0 and the second RSSI threshold is less than 20 dbm0 (see column 2, line 60-65, column 3, lines 5-10, column 4, lines 27-45, the central server sets a plurality of thresholds indicating event zones).

Cameron and Dietrich et al. are analogous art because they are from the same field of endeavor of transmitting and receiving management frames and measuring and recording their signal strengths.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use Cameron's technique for of having thresholds then calculate signal strengths (see column 2, line 60-65, column 3, lines 5-10) in Dietrich et al.'s coverage method (figure 4, coverage module and stat collector).

The motivation to combine would have been to have a coverage hole detection method of receiving and measuring signal strengths of mobile stations through access points, and comparing them with set thresholds then determining on or more events

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based on the comparison which increases the accuracy of the detection (see column 2, lines 60-65, Cameron).

As per claims 16 and 17, Dietrich et al. teaches of a method, computing a RSSI value for a management message by a plurality of access points detecting the management message, the management message originating from a station (see column 4, lines 15-25, figure 1, block 24, the central control element determines coverage holes, and figure 4, coverage analysis module 80 and stats collector 84, column 10, lines 7-29, stats collector maintains a list for each mobile station identifier and their corresponding signal strengths below a threshold signal level, an average of rssi indicates an event).

Dietrich et al. does not expressly disclose initiating an event to mitigate a coverage hole.

Cameron discloses a method of initiating an event to mitigate a coverage hole (see column 2, line 60-65, column 3, lines 5-10, column 4, lines 27-45, the central server sets a plurality of thresholds indicating event zones).

Cameron and Dietrich et al. are analogous art because they are from the same field of endeavor of transmitting and receiving management frames and measuring and recording their signal strengths.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use Cameron's technique for of having thresholds then calculate signal strengths (see column 2, line 60-65, column 3, lines 5-10) in Dietrich et al.'s coverage method (figure 4, coverage module and stat collector).

The motivation to combine would have been to have a coverage hole detection method of receiving and measuring signal strengths of mobile stations through access points, and comparing them with set thresholds then determining on or more events based on the comparison which increases the accuracy of the detection (see column 2, lines 60-65, Cameron).

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See form 892.

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ABDULLAH RIYAMI whose telephone number is (571)270-3119. The examiner can normally be reached on Monday through Thursday 8am-5pm EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Aung Moe can be reached on (571) 272-7314. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Supervisory Patent Examiner, Art Unit 2416

/Abdullah Riyami/  
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